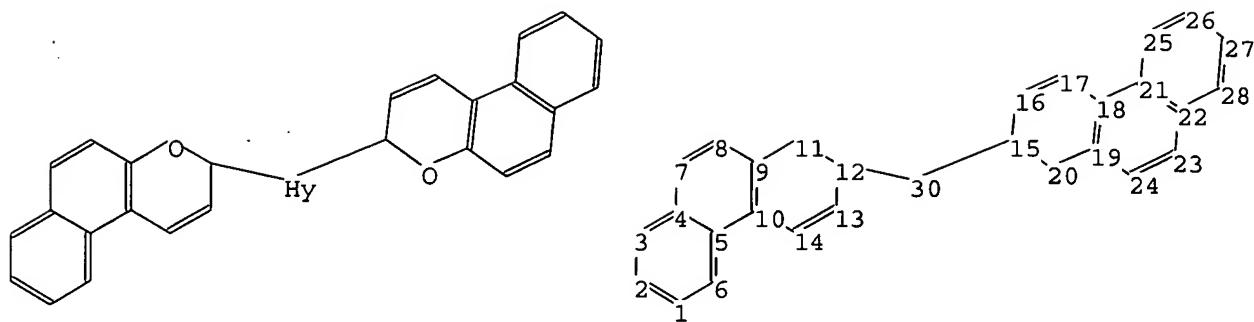


10695062



chain nodes :

30

ring nodes :

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
24 25 26 27 28

chain bonds :

12-30 15-30

ring bonds :

1-2 1-6 2-3 3-4 4-5 4-7 5-6 5-10 7-8 8-9 9-10 9-11 10-14 11-12 12-13
13-14 15-20 15-16 16-17 17-18 18-19 18-21 19-20 19-24 21-22 21-25 22-23
22-28 23-24 25-26 26-27 27-28

exact/norm bonds :

9-11 10-14 11-12 12-13 12-30 13-14 15-20 15-16 15-30 16-17 17-18 19-20

normalized bonds :

1-2 1-6 2-3 3-4 4-5 4-7 5-6 5-10 7-8 8-9 9-10 18-19 18-21 19-24 21-22
21-25 22-23 22-28 23-24 25-26 26-27 27-28

G1:O,S

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom
11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom
20:Atom 21:Atom 22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom 28:Atom
30:Atom

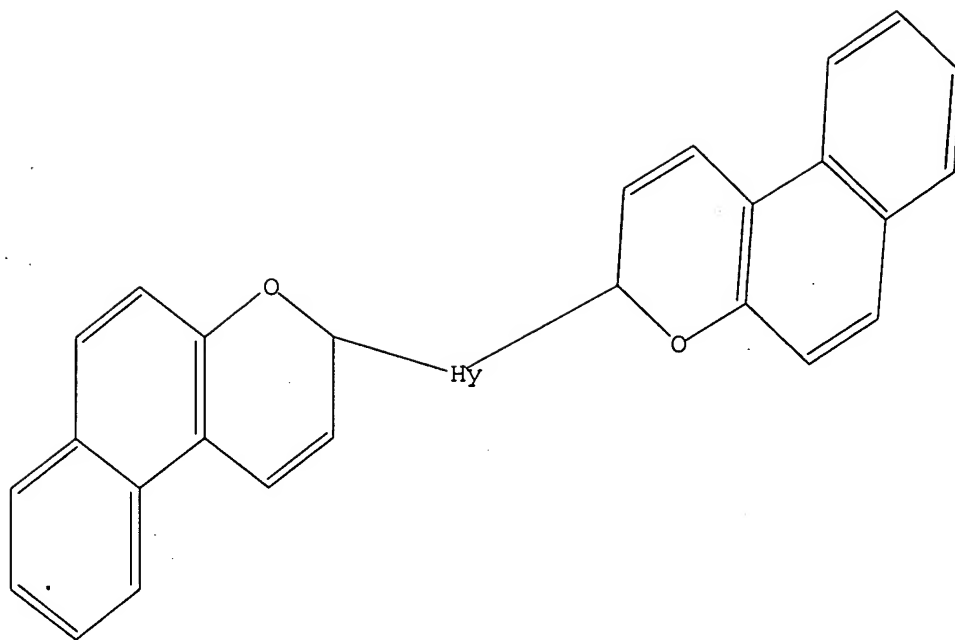
L4 STRUCTURE UPLOADED

=> d

L4 HAS NO ANSWERS

L4 STR

10695062



G1 O,S

Structure attributes must be viewed using STN Express query preparation.

=> s 14

SAMPLE SEARCH INITIATED 10:06:15 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 1216 TO ITERATE

82.2% PROCESSED 1000 ITERATIONS
INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)
SEARCH TIME: 00.00.01

0 ANSWERS

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
BATCH **COMPLETE**
PROJECTED ITERATIONS: 22229 TO 26411
PROJECTED ANSWERS: 0 TO 0

L5 0 SEA SSS SAM L4

=> s 14 full

FULL SEARCH INITIATED 10:06:24 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 25054 TO ITERATE

100.0% PROCESSED 25054 ITERATIONS
SEARCH TIME: 00.00.01

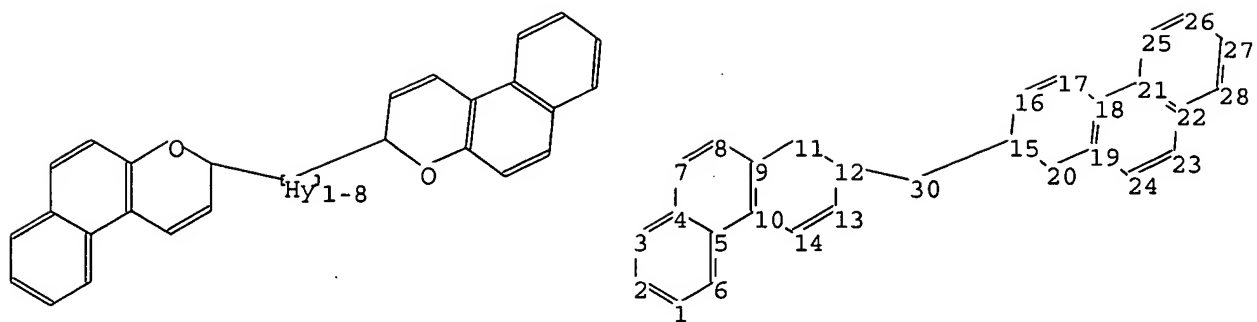
0 ANSWERS

L6 0 SEA SSS FUL L4

=>

Uploading C:\Program Files\Stnexp\Queries\106950622.str

10695062



chain nodes :

30

ring nodes :

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
24 25 26 27 28

chain bonds :

12-30 15-30

ring bonds :

1-2 1-6 2-3 3-4 4-5 4-7 5-6 5-10 7-8 8-9 9-10 9-11 10-14 11-12 12-13
13-14 15-20 15-16 16-17 17-18 18-19 18-21 19-20 19-24 21-22 21-25 22-23
22-28 23-24 25-26 26-27 27-28

exact/norm bonds :

9-11 10-14 11-12 12-13 12-30 13-14 15-20 15-16 15-30 16-17 17-18 19-20

normalized bonds :

1-2 1-6 2-3 3-4 4-5 4-7 5-6 5-10 7-8 8-9 9-10 18-19 18-21 19-24 21-22
21-25 22-23 22-28 23-24 25-26 26-27 27-28

G1:O,S

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom
11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom
20:Atom 21:Atom 22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom 28:Atom
30:Atom

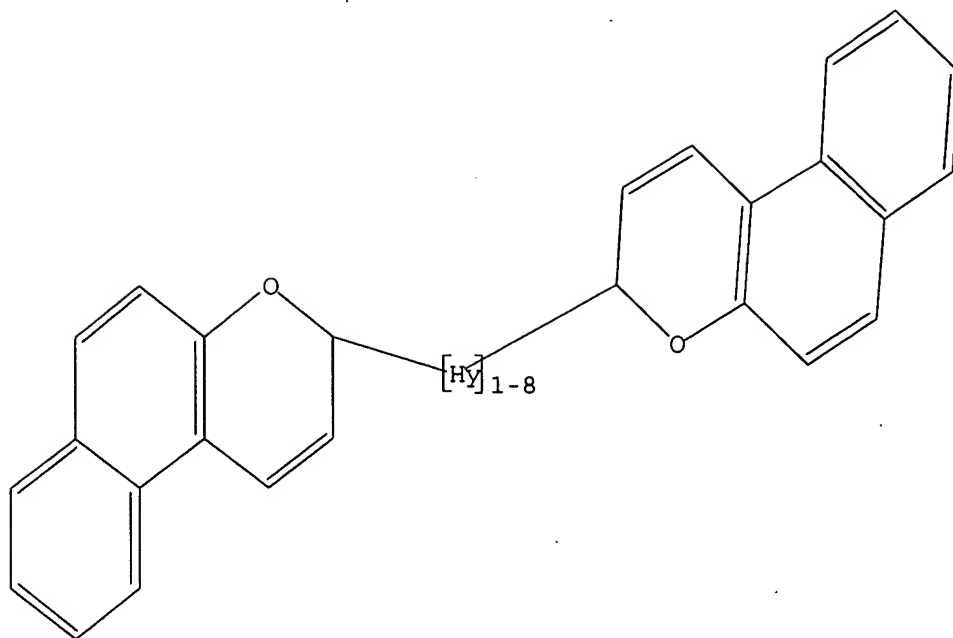
L7 STRUCTURE UPLOADED

=> d

L7 HAS NO ANSWERS

L7 STR

10695062



G1 O,S

Structure attributes must be viewed using STN Express query preparation.

=> s 17

SAMPLE SEARCH INITIATED 10:08:31 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 1178 TO ITERATE

84.9% PROCESSED 1000 ITERATIONS
INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)
SEARCH TIME: 00.00.01

0 ANSWERS

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
BATCH **COMPLETE**
PROJECTED ITERATIONS: 21501 TO 25619
PROJECTED ANSWERS: 0 TO 0

L8 0 SEA SSS SAM L7

=> s 17 full

FULL SEARCH INITIATED 10:09:39 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 24194 TO ITERATE

100.0% PROCESSED 24194 ITERATIONS
SEARCH TIME: 00.00.01

8 ANSWERS

L9 8 SEA SSS FUL L7

=> file caplus
COST IN U.S. DOLLARS
FULL ESTIMATED COST

SINCE FILE	TOTAL
ENTRY	SESSION
487.86	488.07

10695062

FILE 'CAPLUS' ENTERED AT 10:09:49 ON 17 APR 2005
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FILE COVERS 1907 - 17 Apr 2005 VOL 142 ISS 17
FILE LAST UPDATED: 15 Apr 2005 (20050415/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s 19

L10 5 L9

=> d ibib abs hitstr tot

10695062

L10 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:202636 CAPLUS

DOCUMENT NUMBER: 138:239391

TITLE: Photochromic bis-naphthopyran compounds, their

production and their use

INVENTOR(S): Zhao, Weili; Carriera, Erik M.

PATENT ASSIGNEE(S): Johnson & Johnson Vision Care, Inc., USA

SOURCE: PCT Int. Appl., 34 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

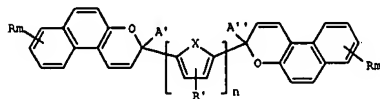
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003020718	A1	20030313	WO 2002-US25669	20020813
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZH, ZW, AM, AZ, BY, BG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CH, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2003078441	A1	20030424	US 2001-945897	20010904
US 6747145	B2	20040608		
EP 1423387	A1	20040602	EP 2002-797735	20020813
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
BR 2002012551	A	20041019	BR 2002-12551	20020813
JP 2005508897	T2	20050407	JP 2003-524988	20020813
TW 591021	B	20040611	TW 2002-9111985	20020903
US 2004084660	A1	20040506	US 2003-695062	20031028
PRIORITY APPL. INFO.:			US 2001-945897	A 20010904
			WO 2002-US25669	W 20020813

OTHER SOURCE(S):

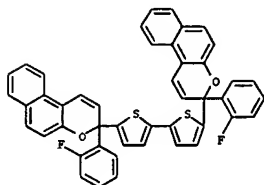
MARPAT 138:239391

GI

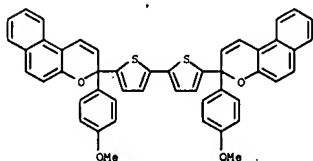


AB The invention provides photochromic bis-naphthopyran compds. (I; A', A'' = organic group; R, R' = H, OH, halogen, nitro, cyano, allyl, phenylethynyl, phenylvinyl, other organic group; m = 0-3; n = 1-8) and their production from

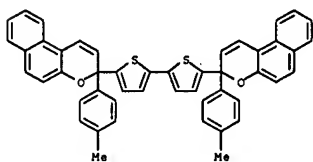
L10 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



RN 501425-46-3 CAPLUS
CN 3H-Naphtho[2,1-b]pyran, 3,3'-[2,2'-bithiophene]-5,5'-diylbis[3-(4-methoxyphenyl)]- (9CI) (CA INDEX NAME)



RN 501425-47-4 CAPLUS
CN 3H-Naphtho[2,1-b]pyran, 3,3'-[2,2'-bithiophene]-5,5'-diylbis[3-(4-methylphenyl)]- (9CI) (CA INDEX NAME)



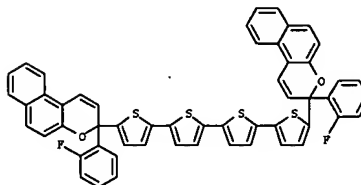
IT 501425-48-5P
RL: IMP (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(yellow-brown dye; production of photochromic bis-naphthopyran dyes for lenses)

RN 501425-48-5 CAPLUS
CN 3H-Naphtho[2,1-b]pyran, 3,3'-[2,2'-bithiophene]-5,5'-diylbis[3-(4-

L10 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
propargyl alcs. and naphthols. I exhibit a wide range of color, from pink to purple to blue gray, upon activation by a source of UV light and are suitable for use in photochromic ophthalmic lenses with fast response in both color change on activation and return to original color, and good fatigue resistance. In an example, thiophene was acylated with p-methoxybenzoyl chloride to give a ketone which was treated with Na acetylide; the resulting propynol deriv. was cyclized with 2-naphthol followed by dimerization to give pink 5,5'-bis[3-(p-methoxyphenyl)] [3H]naphtho[2,1-b]pyran-3-yl]-2,2'-bithiophene.

IT 501425-50-9P
RL: IMP (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(dye; photochromic bis-naphthopyran dyes for lenses)

RN 501425-50-9 CAPLUS
CN 3H-Naphtho[2,1-b]pyran, 3,3'-[2,2':5',2'':5'',2''':5''',2''''-quaterthiophene]-5,5'''-diylbis[3-(2-fluorophenyl)]- (9CI) (CA INDEX NAME)

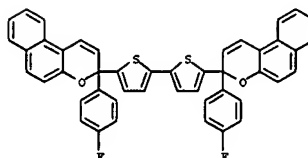


IT 405151-03-3P 501425-46-3P 501425-47-4P
RL: IMP (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(pink dye; production of photochromic bis-naphthopyran dyes for lenses)

RN 405151-03-3 CAPLUS

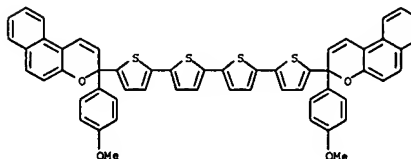
CN 3H-Naphtho[2,1-b]pyran, 3,3'-[2,2':5',2'':5'',2''':5''',2''''-quaterthiophene]-5,5'''-diylbis[3-(2-fluorophenyl)]- (9CI) (CA INDEX NAME)

L10 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

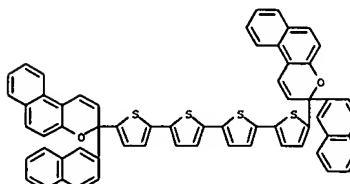


IT 402491-87-6P 501425-48-5P
RL: IMP (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(yellow-green dye; production of photochromic bis-naphthopyran dyes for lenses)

RN 402491-87-6 CAPLUS
CN 3H-Naphtho[2,1-b]pyran, 3,3'-[2,2':5',2'':5'',2''':5''',2''''-quaterthiophene]-5,5'''-diylbis[3-(4-methoxyphenyl)]- (9CI) (CA INDEX NAME)



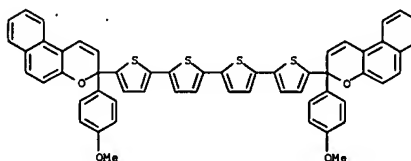
RN 501425-49-6 CAPLUS
CN 3H-Naphtho[2,1-b]pyran, 3,3'-[2,2':5',2'':5'',2''':5''',2''''-quaterthiophene]-5,5'''-diylbis[3-(2-naphthalenyl)]- (9CI) (CA INDEX NAME)



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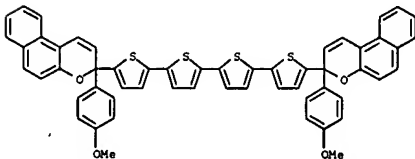
L10 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
 REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2002:623262 CAPLUS
 DOCUMENT NUMBER: 138:31310
 TITLE: Photochromic oligothiophene substituted chromenes. A new approach towards a molecular switch. Electrical characterization
 AUTHOR(S): Yassar, A.; Jaafari, H.; Rebiere-Galy, N.; Frigoli, M.; Moustrou, C.; Samat, A.; Guglielmetti, R.
 CORPORATE SOURCE: ITODYS, Paris, 75005, Fr.
 SOURCE: European Physical Journal: Applied Physics (2002), 18(1), 3-8
 CODEN: EPAPFV; ISSN: 1286-0042
 PUBLISHER: EDP Sciences
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB We present a new approach for the realization of a mol. photo-switch, based on photochromic oligothiophene-substituted chromenes. When optically excited, these compds. undergo a structural change passing from a neutral state (closed form) to a strongly polarized one (open form). This photochromic process is accompanied by a deep changes in the elec. characterization.
 IT 402491-87-6
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process); USES (Uses)
 (elec. characterization of photochromic oligothiophene substituted chromenes in mol. photo-switches)
 RN 402491-87-6 CAPLUS
 CN 3H-Naphtho[2,1-b]pyran, 3,3'-[2,2':5',2'':5'',2'''-quaterthiophene]-5,5'''-diylbis[3-(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



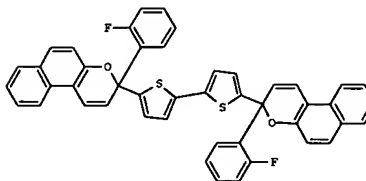
REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2002:415365 CAPLUS
 DOCUMENT NUMBER: 137:192685
 TITLE: Light-triggered molecular devices based on photochromic oligothiophene substituted chromenes
 AUTHOR(S): Yassar, A.; Garnier, F.; Jaafari, H.; Rebiere-Galy, N.; Frigoli, M.; Moustrou, C.; Samat, A.; Guglielmetti, R.
 CORPORATE SOURCE: ITODYS, Paris, F-75005, Fr.
 SOURCE: Applied Physics Letters (2002), 80(23), 4297-4299
 CODEN: APPLAB; ISSN: 0003-6951
 PUBLISHER: American Institute of Physics
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB An original concept for the realization of a mol. photoswitch is proposed, based on photochromic oligothiophene-substituted chromenes. When optically excited, these compds. undergo a structural change passing from a neutral state (closed form) to a strongly polarized one (open form). This photochromism process is also accompanied by a large increase in the elec. conductivity
 IT 402491-87-6
 RL: DEV (Device component use); PRP (Properties); USES (Uses)
 (reference compound; mol. photoswitch based on photochromic oligothiophene substituted chromenes)
 RN 402491-87-6 CAPLUS
 CN 3H-Naphtho[2,1-b]pyran, 3,3'-[2,2':5',2'':5'',2'''-quaterthiophene]-5,5'''-diylbis[3-(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

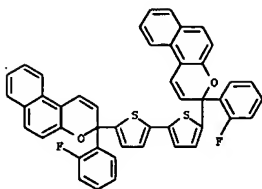
L10 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2002:96168 CAPLUS
 DOCUMENT NUMBER: 136:270346
 TITLE: A smart photochromophore through synergistic coupling of photochromic subunits
 AUTHOR(S): Zhao, Wei; Carreira, Erick M.
 CORPORATE SOURCE: Laboratorium fuer Organische Chemie, ETH-Zuerich, Zurich, CH-8093, Switz.
 SOURCE: Journal of the American Chemical Society (2002), 124(8), 1582-1583
 CODEN: JACSAT; ISSN: 0002-7863
 PUBLISHER: American Chemical Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 GI



AB A novel bis-naphthopyran (I) was developed in which the individual photochromophores are electronically coupled to form a dimeric system generating one or two colored forms. The compound's optical properties are unique, differing significantly from a simple first-order superimposition of the monomeric constituents. Such a photochromophore has great promise for the development of smart optical devices. Characterization data for I and tabulation of absorption and fade results are available at <http://pubs.acs.org>
 IT 405151-03-3
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
 (photochromism of bis-naphthopyran generating one or two colored forms)
 RN 405151-03-3 CAPLUS
 CN 3H-Naphtho[2,1-b]pyran, 3,3'-[2,2'-bithiophene]-5,5'-diylbis[3-(2-fluorophenyl)- (9CI) (CA INDEX NAME)

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L10 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN

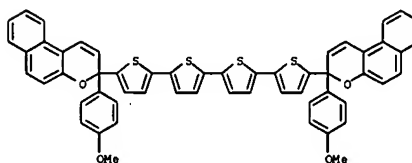
ACCESSION NUMBER: 2001:853861 CAPLUS
DOCUMENT NUMBER: 136:224077
TITLE: Molecular switch devices realized by photochromic oligothiophenes
AUTHOR(S): Yassar, A.; Rebiere-Galy, N.; Frigoli, M.; Moustrou, C.; Samat, A.; Guglielmetti, R.; Jaafari, A.
CORPORATE SOURCE: ITODYS, Universite Paris 7, URA CNRS 34, Paris, F-75251, Fr.
SOURCE: Synthetic Metals (2001), 124(1), 23-27
CODEN: SYMEDZ; ISSN: 0379-6779
PUBLISHER: Elsevier Science S.A.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The authors describe a new chromene bearing at their three position terthiophene and quaterthiophene. These chromene-substituted oligothiophenes have been prepared by palladium-catalyzed coupling reaction. When optically excited, these mols. undergo a structural change passing from a neutral state (closed form) to a strongly polarized one (open form). This photochromic process is also accompanied by a large increase in the elec. conductivity

IT 402491-87-6P 402491-88-7P
RL: CPS (Chemical process); DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); USES (Uses) (photochem. and photochromic properties of chromene-substituted oligothiophenes and photoelec. mol. switch based on these compds.)

RN 402491-87-6 CAPLUS

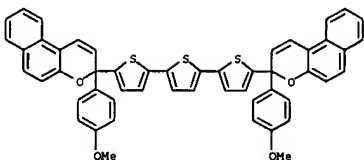
CN 3H-Naphtho[2,1-b]pyran, 3,3'-[2,2':5',2'':5'',2''':5''',2''''-quaterthiophene]-5,5'''-diylbis[3-(4-methoxyphenyl)- (SCI) (CA INDEX NAME)



RN 402491-88-7 CAPLUS

CN 3H-Naphtho[2,1-b]pyran, 3,3'-[2,2':5',2'':5'',2''':5''',2''''-terthiophene]-5,5'''-diylbis[3-(4-methoxyphenyl)- (SCI) (CA INDEX NAME)

L10 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

10695062

=> logoff

ALL L# QUERIES AND ANSWER SETS ARE DELETED AT LOGOFF

LOGOFF? (Y)/N/HOLD:y

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

25.15

513.22

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE

TOTAL

ENTRY

SESSION

CA SUBSCRIBER PRICE

-3.65

-3.65

STN INTERNATIONAL LOGOFF AT 10:10:13 ON 17 APR 2005